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LISTS OF SPECIES

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An updated checklist of Chondrichthyes from the southeast Pacific off Peru

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Abstract: The first updated and comprehensive checklist of Chondrichthyes from the southeast Pacific off Peru, based on the revision of scientific literature, is presented. The group of Chondrichthyes in the Peruvian coast is composed of 115 species that include 66 species of sharks, 43 species of batoids, and six species of chimaeras. We present nine new records and one recent discovery obtained from secondary sources. For some species, we also compiled the extensions in the geographic distributions.

Key words: sharks, batoids, chimaeras, Peru, Southeast Pacific

INTRODUCTION

Due to the presence of two marine currents, the Peruvian Current and the Equatorial Current, the marine ecosystem of Peru is characterized by a cold temperate upwelling region, a warm and tropical region, and an intermediate area where the two currents converge (Spalding et al. 2007). The Peruvian Current is a cold, low-salinity ocean current that flows from north to south along the west coast of South America from the southern tip of Chile to northern Peru. The Peruvian Current is an eastern boundary current flowing towards the equator. It can extend 1,000 km offshore and is one of the major upwelling systems of the world, supporting an extraordinary abundance of marine life (Freon et al. 2009). Warmer waters and lower productivity, on the other hand, characterize the Equatorial Current, which flows from the equator and dominates the northern coastal waters off Peru.

The coastal and offshore waters of Peru exhibit a high diversity of ichthyofauna because of these nutrient-rich waters are under the influence of the Peruvian Current. In this region, an estimated of 1,070 species, grouped in 197 families and 39 orders are reported. This diversity is strongly influenced by oceanographic variations at different spatial and temporal scales (Chirichigno and Velez 1998; Chirichigno and Cornejo 2001). However, several aspects remain to be investigated regarding the ichthyofauna in Peru, including taxonomy, ecology and oceanography. These gaps of information set a challenging scenario for the implementation of conservation and management actions for many fish species, including cartilaginous species (i.e., sharks, batoids and chimaeras). In Peru, several species of sharks and batoids are of commercial importance. Many shark and rays species are targeted by the artisanal fishery, but are also an important component of the non-targeted catch (i.e., bycatch; Velez-Zuazo 2012). Given the ubiquitous presence of sharks and batoids in daily landings along the coast of Peru, it is remarkable that little is known about their diversity. Misidentifications are common at port and likely reflected in governmental reports (Velez-Zuazo et al. 2015). In this light, a better knowledge of chondrichthyans species present in Peru can help improve recordings at landing ports. Furthermore, it can serve to put in perspective the diversity of this group in a broader geographic scale. The purpose of this study is to provide an updated checklist of Chondrichthyan species from Peru based on scientific literature. To date, there is no one document that provides a comprehensive list of sharks, batoids and chimaeras in Peru. Before this study, only the National

Action Plan for the Conservation and Management of Sharks, Rays and Related Species in Peru (NPOA-Sharks Peru 2014) served as a checklist for the Peruvian chondrichthyans, but this list is limited to species of commercial importance.

MATERIALS AND METHODS

Peru is located along the west side of South America, and occupies an area between the latitudes 03° S and 18° S and longitudes 068° W and 082° W.. The coast of Peru is 3,079.5 km long and the Peruvian Sea is a belt of water extending 200 nautical miles from the coastline. The studied area comprises the continental shelf and the continental slope, covering a maximum depth of 6,000 m (Fisher et al. 1962).

To prepare this list, we relied on previously published articles and gray literature. For the classification system order, scientific nomenclature, and common names of Elasmobranchii, we have followed Compagno (2005a, 2005b, 2005c), Didier et al. (2012), Naylor et al. (2012), and Froese and Pauly (2015). For the inclusion of species in this checklist and its geographic distribution, we used the following literature: Chirichigno (1973), Chirichigno and McEachran (1979), Dolganov (1984), Long (1997), Chirichigno and Vélez (1998), Chirichigno and Cornejo (2001), Hooker (2009), Nakaya et al. (2009), Angulo et al. (2014), NPOA-Sharks Peru (2014), and Velez-Zuazo et al. (2015). We used Compagno et al. (2005c) and the Red List of the International Union of the Conservation of Nature (IUCN 2012,) to report expansions in range distribution. The checklist is presented in the taxonomic sequence: superclass, class, subclass, order, family, genus and species. National museum references and scientific collections for fishes from Peru are Universidad Ricardo Palma (URP), Universidad Nacional Federico Villareal (UNFV), Universidad Científica del Sur (UCSUR) and Instituto del Mar del Perú (IMARPE).

RESULTS

Superclass Gnathostomata
Class Chondrichthyes
Subclass Elasmobranchii
Order Hexanchiformes

Family Hexanchidae
Hexanchus griseus (Bonnaterre, 1788): Bluntnose Sixgill Shark (Chirichigno and Cornejo 2001)
Heptranchias perlo (Bonnaterre, 1788): Sharpnose Sevengill Shark (Chirichigno and Cornejo 2001)
Notorynchus cepedianus (Péron, 1807): Broadnose Sevengill Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Order Squaliformes
Family Echinorhinidae
Echinorhinus cookei Pietschmann, 1928: Prickly Shark (Chirichigno and Cornejo 2001; Nakaya et al. 2009; NPOA-Sharks Peru 2014)

Family Centrophoridae
Deania calcea (Lowe, 1839): Birdbeak Dogfish (Long 1997)

Family Etmopteridae
Aculeola nigra de Buen, 1959: Hooktooth Dogfish (Chirichigno and Cornejo 2001; Nakaya et al. 2009)
Centroscyllium nigrum Garman, 1899: Combtooth Dogfish (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Family Somniosidae
Centroselachus crepidater (Barbosa du Bocage & de Brito Capello, 1864): Longnose Velvet Dogfish (Chirichigno and Cornejo 2001)
Somniosus pacificus Bigelow & Schroeder, 1944: Pacific Sleeper Shark (Chirichigno and Cornejo 2001)
Zameus squamulosus (Günther, 1877): Smallmouth Velvet Dogfish (Nakaya et al. 2009)

Family Dalatiidae
Isistius brasiliensis (Quoy & Gaimard, 1824): Cookie Cutter Shark (Chirichigno and Cornejo 2001)
Euprotomicrus bispinatus (Quoy & Gaimard, 1824): Pygmy Shark (Chirichigno and Cornejo 2001)
Mollisquama parini Dolganov, 1984 - Pocket Shark (Dolganov 1984; Chirichigno and Cornejo 2001)

Order Squatiniformes
Family Squatinidae
Squatina armata (Philippi, 1887): South Pacific Angel Shark (Chirichigno and Cornejo 2001)
Squatina californica Ayres, 1859: Pacific Angel Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Order Heterontiformes

Family Heterodontidae
Heterodontus francisci (Girard, 1855): Horn Shark (Chirichigno and Cornejo 2001)
Heterodontus mexicanus Taylor & Castro-Aguirre, 1972: Mexican Horn Shark (Chirichigno and Cornejo 2001)
Heterodontus quoyi (Fréminville, 1840): Galapagos Bullhead Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Order Orectolobiformes

Family Ginglymostomatidae
Ginglymostoma cirratum (Bonnaterre, 1788): Nurse Shark (Chirichigno and Cornejo 2001)

Family Rhincodontidae

Rhincodon typus Smith, 1828: Whale Shark (Chirichigno and Cornejo 2001)

Order Lamniformes

Family Pseudocarchariidae

Pseudocarcharias kamoharai (Matsubara, 1936): Crocodile Shark (Nakaya et al. 2009)

Family Lamnidae

Carcharodon carcharias (Linnaeus, 1758): White Shark (Chirichigno and Cornejo 2001)

Isurus oxyrinchus Rafinesque, 1810: Shortfin Mako Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014; Velez-Zuazo et al. 2015)

Lamna nasus (Bonnaterre, 1788): Porbeagle (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014; Velez-Zuazo et al. 2015)

Family Alopiidae

Alopias vulpinus (Bonnaterre, 1788): Common Thresher (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Alopias pelagicus Nakamura, 1935: Pelagic Thresher (Velez-Zuazo et al. 2015)

Alopias superciliosus Lowe, 1841: Bigeye Thresher (Chirichigno and Cornejo 2001)

Family Cetorhinidae

Cetorhinus maximus (Gunnerus, 1765): Basking Shark (Chirichigno and Cornejo 2001)

Order Carcharhiniformes

Family Scyliorhinidae

Apristurus brunneus (Gilbert, 1892): Brown Catshark (Chirichigno and Cornejo 2001)

Apristurus kampae Taylor, 1972: Longnose Catshark (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Apristurus nasutus de Buen, 1959: Largenose Catshark (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Bythaelurus canescens (Günther, 1878): Dusky Catshark (Chirichigno and Velez 1998)

Cephalurus cephalus (Gilbert, 1892): Lollipop Catshark (Chirichigno and Cornejo 2001)

Cephalurus sp. A sensu (Compagno et al. 2005a): Southern Lollipop Catshark (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Cephaloscyllium ventriosum (Garman, 1880): Swellshark (Chirichigno and Cornejo 2001)

Galeus piperatus Springer & Wagner, 1966: Peppered Catshark (Chirichigno and Cornejo 2001)

Schroederichthys bivius (Müller & Henle, 1838): Narrowmouthed Catshark (Chirichigno and Cornejo 2001)

Schroederichthys chilensis (Guichenot, 1848): Redspotted Catshark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Family Triakidae

Galeorhinus galeus (Linnaeus, 1758): Tope Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014; Velez-Zuazo et al. 2015)

Mustelus californicus Gill, 1864: Grey Smooth-hound (Cornejo and Chirichigno 2012; unpubl. data)

Mustelus dorsalis Gill, 1864: Sharptooth Smooth-hound (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Mustelus henlei (Gill, 1863): Brown Smooth-hound (Chirichigno and Cornejo 2001)

Mustelus lunulatus Jordan & Gilbert, 1882: Sicklefin Smooth-hound (Chirichigno and Cornejo 2001)

Mustelus mento Cope, 1877: Speckled Smooth-hound (Chirichigno 1973; Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Mustelus whitneyi Chirichigno, 1973: Humpback Smooth-hound (Chirichigno 1973; Chirichigno and Cornejo 2001; Nakaya et al. 2009; NPOA-Sharks Peru 2014)

Triakis acutipinna Kato, 1968: Sharpfin Houndshark (Chirichigno and Cornejo 2001)

Triakis maculata Kner & Steindachner, 1867: Spotted Houndshark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Family Carcharhinidae

Carcharhinus altimus (Springer, 1950): Bignose Shark (Chirichigno and Cornejo 2001)

Carcharhinus brachyurus (Günther, 1870): Copper Shark (Chirichigno and Cornejo 2001; Velez-Zuazo et al. 2015; NPOA-Sharks Peru 2014)

Carcharhinus falciformis (Müller & Henle, 1839): Silky Shark (Chirichigno and Cornejo 2001)

Carcharhinus galapagensis (Snodgrass & Heller, 1905): Galapagos Shark (Chirichigno and Cornejo 2001)

Carcharhinus leucas (Müller & Henle, 1839): Bull Shark (Chirichigno and Cornejo 2001)

Carcharhinus limbatus (Müller & Henle, 1839): Blacktip Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Carcharhinus longimanus (Poey, 1861): Oceanic Whitetip Shark (Chirichigno and Cornejo 2001)

Carcharhinus porosus (Ranzani, 1839): Smalltail Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Galeocerdo cuvier (Péron & Lesueur, 1822): Tiger Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Nasolamia velox (Gilbert, 1898): Whitenose Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Negaprion brevirostris (Poey, 1868): Lemon Shark (Chirichigno and Cornejo 2001)

Prionace glauca (Linnaeus, 1758): Blue Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014; Velez-Zuazo et al. 2015)

Rhizoprionodon longurio (Jordan & Gilbert, 1882): Pacific Sharpnose Shark (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Family Sphyrnidae

Sphyrna corona Springer, 1940: Scalloped Bonnethead (Chirichigno and Cornejo 2001)

Sphyrna lewini (Griffith & Smith, 1834): Scalloped Hammerhead (Chirichigno and Cornejo 2001)

Sphyrna media Springer, 1940: Scoophead (Chirichigno and Cornejo 2001)

Sphyrna mokarran (Rüppell, 1837): Great Hammerhead (Chirichigno and Cornejo 2001)

Sphyrna tiburo (Linnaeus, 1758): Bonnethead Shark (Chirichigno and Cornejo 2001)

Sphyrna zygaena (Linnaeus, 1758): Smooth Hammerhead (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014; Velez-Zuazo et al. 2015)

Order Pristiformes

Family Pristidae

Pristis pectinata Latham, 1794: Smalltooth Sawfish (Chirichigno and Cornejo 2001)

Pristis pristis (Linnaeus, 1758): Common Sawfish (Chirichigno and Cornejo 2001)

Order Torpediniformes

Family Narcinidae

Discopyge tschudii Heckel, 1846: Apron Electric Ray (Chirichigno and Cornejo 2001)

Narcine entemedor Jordan & Starks, 1895: Giant Electric Ray (Chirichigno and Cornejo 2001)

Family Torpedinidae

Torpedo californica Ayres, 1855: Pacific Electric Ray (Chirichigno and Cornejo 2001)

Torpedo peruana Chirichigno, 1963: Peruvian Torpedo (Nakaya et al. 2009)

Torpedo tremens de Buen, 1959: Chilean Torpedo (Chirichigno and Cornejo 2001; Nakaya et al. 2009; NPOA-Sharks Peru 2014)

Order Rajiformes

Family Rhinobatidae

Rhinobatos glaucostigma Jordan & Gibert, 1883: Speckled Guitarfish (Chirichigno and Cornejo 2001)

Rhinobatos leucorhynchus Gunther, 1867: Whitesnout Guitarfish (Chirichigno and Cornejo 2001)

Rhinobatos planiceps Garman, 1880: Pacific Guitarfish (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Rhinobatos prahli Acero & Franke, 1995: Gorgona Guitarfish (Chirichigno and Cornejo 2001)

Zapteryx exasperata (Jordan & Gilbert, 1880): Banded Guitarfish (Chirichigno and Cornejo 2001)

Family Rajidae

Bathyraja aguja (Kendall & Radcliffe, 1912): Needle Skate (Nakaya et al. 2009)

Bathyraja longicauda (de Buen, 1959): Longtail Black Skate (Chirichigno and Cornejo 2001)

Bathyraja peruana McEachran & Miyake, 1984: Peruvian Black Skate (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Gurgesiella furvescens de Buen, 1959: Dusky Finless Skate (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Raja equatorialis Jordan & Bollman, 1890: Ecuatorial Skate (Chirichigno and Cornejo 2001)

Raja velezi Chirichigno, 1973: Velez's Ray; Witch Skate (Chirichigno 1973; Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Rajella nigerrima (de Buen, 1960): Blackish Skate (Chirichigno and Cornejo 2001)

Sympterygia brevicaudata (Cope, 1877): Spotted Skate (Chirichigno and Cornejo 2001; Nakaya et al. 2009; NPOA-Sharks Peru 2014)

Family Dasyatidae

Dasyatis brevis (Garman, 1880): Whiptail Stingray (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Dasyatis longa (Garman, 1880): Longtail Stingray (Hooker 2009)

Pteroplatytrygon violacea (Bonaparte, 1832): Pelagic Stingray (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Family Gymnuridae

Gymnura afuerae (Hildebrand, 1946): (NPOA-Sharks Peru 2014)

Gymnura marmorata (Cooper, 1864): Butterfly Ray (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Family Mobulidae

Manta birostris (Walbaum, 1792)**:** Giant Manta (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Mobula japonica (Müller & Henle, 1841)**:** Spinetail Mobula (Chirichigno and Cornejo 2001)

Mobula munkiana Notarbartolo-di-Sciara, 1987**:** Munk's Devil Ray (Chirichigno and Cornejo 2001)

Mobula tarapacana (Philippi, 1892)**:** Chilean Devil Ray (Chirichigno and Cornejo 2001)

Mobula thurstoni (Lloyd, 1908)**:** Smoothtail Mobula (Chirichigno and Cornejo 2001)

Family Myliobatidae

Aetobatus narinari (Euphrasen, 1790): Spotted Eagle Ray (Chirichigno and Cornejo 2001)

Myliobatis chilensis Philippi, 1892: Chilean Eagle Ray (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Myliobatis longirostris Applegate & Fitch, 1964: Snouted Eagle Ray (Chirichigno and Cornejo 2001)

Myliobatis peruvianus Garman, 1913: Peruvian Eagle Ray (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Familia Rhinopteridae

Rhinoptera steindachneri Evermann & Jenkins, 1891: Pacific Cownose Ray (Chirichigno and Cornejo 2001; NPOA-Sharks Peru 2014)

Family Urotrygonidae

Urobatis halleri (Cooper, 1863): Haller's Round Ray (Hooker 2009)

Urobatis tumbesensis (Chirichigno & McEachran, 1979): Tumbes Round Stingray (Chirichigno and McEachran 1979; Chirichigno and Cornejo 2001)

Urotrygon caudispinosus Hildebrand, 1946: Stingray (Chirichigno and Cornejo 2001)

Urotrygon chilensis (Günther, 1872): Chilean Round Ray (Chirichigno and Cornejo 2001)

Urotrygon munda Gill, 1863: Munda Round Ray (Chirichigno and Cornejo 2001)

Urotrygon peruanus Hildebrand, 1946: Peruvian Stingray (Chirichigno and Cornejo 2001)

Urotrygon serrula Hildebrand, 1946: Stingray (Chirichigno and Cornejo 2001)

Urotrygon aspidura (Jordan & Gilbert, 1882): Spiny Tailed Round Ray (Chirichigno and Cornejo 2001)

Subclass Holocephalii

Order Chimaeriformes

Family Callorhinchidae

Callorhinchus callorynchus (Linnaeus, 1758): Plownose Chimaera (Chirichigno and Cornejo 2001; Nakaya et al. 2009; NPOA-Sharks Peru 2014)

Family Rhinochimaeridae

Harriotta raleighana Goode & Bean, 1895: Bentnose Rabbitfish (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Rhinochimaera africana Compagno, Stehmann & Ebert, 1990: Paddlenose Chimaera (Nakaya et al. 2009)

Rhinochimaera pacifica (Mitsukuri, 1895): Knifenose Chimaera (Chirichigno and Cornejo 2001)

Family Chimaeridae

Hydrolagus macrophthalmus de Buen, 1959: Bigeye Chimaera, Chilean Ratfish (Chirichigno and Cornejo 2001; Nakaya et al. 2009)

Chimaera orientalis Angulo, Lopez, Bussing & Murase, 2014: Eastern Pacific Black Chimaera (Angulo et al. 2014)

DISCUSSION

The present checklist includes 115 species of marine Chondrichthyes in Peru, which represents approximately 9% of the 1,275 species of living sharks, batoids and chimaeras reported (Didier et al. 2012; Naylor et al. 2012; Last et al. 2013; White et al. 2013; Angulo et al. 2014; Kawauchi et al. 2014; Weigmann et al. 2014; Kemper et al. 2015). Based on the taxonomic records of chondrichthyes for the southeast Pacific, the present checklist suggests that the Peruvian Sea might have a higher biodiversity than Chile (96 species: sharks=53 spp., batoids=39 spp., chimaeras=4 spp.) and Ecuador (92 species: sharks=58 spp., baotids=33 spp., chimaeras=1 spp.) (Lamilla 2010; Sáez et al. 2010). Nevertheless, this needs to be properly validated with the vouchers in order to present an accurate comparison.

We include nine recently published (since 2009) records of Chondrichthyes, including a recently described species: *Zameus squamulosus* (Nakaya et al. 2009), *Pseudocarcharias kamoharai* (Nakaya et al. 2009), *Alopias pelagicus* (Velez-Zuazo et al. 2015), *Mustelus californicus* (Cornejo et al. 2012, unpubl. data), *Torpedo peruana* (Nakaya et al. 2009), *Dasyatis longa* (Hooker 2009), *Urobatis halleri* (Hooker 2009), *Gymnura afuerae* (NPOA-Sharks Peru 2014), *Rhinochimaera africana* (Nakaya et al. 2009) and *Chimaera orientalis* (Angulo et al. 2014). In addition, based on recent molecular study the given species name *Pristis microdon* (Chirichigno and Cornejo 2001) was changed to *P. pristis* (Faria et al. 2013)

During this review of literature, we detected likely expansions of range distribution for 15 species of sharks, six batoids, and two chimaeras by comparing the distribution range from previous Peruvian literature with international literature. According to Compagno et al. (2005c) and the IUCN Red List (IUCN 2012), these species were not reported previously from Peruvian waters and include *Centroselachus crepidater* (south of Peru) (Chirichigno and Cornejo 2001), *Somniosus pacificus* (recorded between 03°3′ S and Pisco) (Chirichigno and Cornejo 2001), *Isistius brasiliensis* (between Ecuadorian-Peruvian border and 13°46′ S) (Chirichigno and Cornejo 2001), *Apristurus brunneus, Apristurus kampae* and *Apristurus nasutus* (Nakaya et al. 2009), *Cephalurus cephalus* and *Galeus piperatus* (south of Peru) (Chirichigno and Cornejo 2001), *Schroederichthys bivius*, *Mustelus californicus* and *Mustelus lunulatus* (between the Ecuadorian–Peruvian border and

Talara, Piura) (Chirichigno and Cornejo 2001), *Triakis acutipinna* (collected at 05°23′ S, 081°14′ W) (Chirichigno and Cornejo 2001), *Negaprion brevirostris* (north of Peru) (Chirichigno and Cornejo 2001), *Sphyrna media* (Puerto Pizarro, Tumbes) (Chirichigno and Cornejo 2001), *Sphyrna tiburo* (Puerto Pizarro, Tumbes) (Chirichigno and Cornejo 2001), *Pristis pectinata* (mouth of Tumbes River) (Chirichigno and Cornejo 2001), *Rhinobatos glaucostigma* (northern Peru) (Chirichigno and Cornejo 2001), *Rhinobatos leucorhynchus* (Tumbes, Peru) (Chirichigno and Cornejo 2001); *Torpedo californica* (northern Peru) (Chirichigno and Cornejo 2001), *Dasyatis longa* (registered in Tumbes) (Hooker 2009), *Urobatis halleri* (Isla Lobos de Tierra, Lambayeque) (Hooker 2009), *Rhinochimaera africana* (Nakaya et al. 2009), and *Hydrolagus macrophthalmus* (Nakaya et al. 2009).

A recent study reveals a worldwide lack of information regarding chondrichthyans (Dulvy et al. 2014). According to Dulvy et al. (2014), nearly half of known species of sharks, batoids and chimaeras are categorized as Data Deficient by the International Union for the Conservation of Nature. While there exists an important information gap related to their biology and ecology, even basic information about their presence or absence in diverse marine ecosystems of the world is scarce. This updated, comprehensive checklist is important because it documents in one publication the current diversity of sharks, batoids and chimaeras in Peru, and it can provide a basis for an improved system of fishery management and administration as established in the International Plan of Action for Conservation and Management of Sharks (FAO 1999) and the recently approved National Action Plan for the Conservation and Management of Sharks, Rays and Related Species in Peru.

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